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CLASSIFICATION AND TREATMENT OF NEPHRITIS

F. H. HELLER, M. D.
Pueblo, Colo.

(Read before The New Mexico Medical Society, at its Fifty-second Annual Session, at Las Vegas, N. M., July 19-21, 1934.)

It is essential that a classification of Bright's disease be made, upon which the living patient with a renal lesion may be fitted, and on its background, proper diagnosis and rational treatment be instituted.

One cannot wait for a pathological diagnosis. The clinician is primarily concerned with the practical problem of the nephritic's condition.

Many classifications have been designed. Volhard and Fahr outlined a good one in 1914. Christian, VanSlyke and his associates, Mosenthal, and others, have good classifications. Most of them are somewhat similar. I have chosen the one by Addis, as modified by VanSlyke, because it is entirely a clinical classification based upon the onset, clinical course, physical examination of the patient, and laboratory findings, especially the study of the urine.

CLASSIFICATION OF BRIGHT'S DISEASE
(ADDIS)

I. Hemorrhagic:
   Acute - latent - healed.
   Chronic - active - terminal.

II. Degenerative:
   a. Cryptic lipoidal nephrosis.
   b. Poisons of known composition.
   c. Toxemias of pregnancy.
   d. Toxemias associated with general infection.
   e. Toxemias of foul infection.
   f. Toxemias associated with mixed infection.

III. Arteriosclerotic:
   Benign.
   Malignant.

The treatment of nephritis becomes essentially the appropriate treatment for the type of clinical disease which we may have. This is true even when we are dealing with a single manifestation such as edema.

ACUTE HEMORRHAGIC NEPHRITIS

Clinically there seems to be every evidence of a direct relation between acute hemorrhagic nephritis and infection—most frequently, some type of streptococcus infection. The mechanism of the production of the disease entity, acute hemorrhagic nephritis, we are still very far from understanding. Its prevention, therefore, is extremely unsatisfactory.

One treating it must first recognize that the disease is not limited to the kidneys, and that the kidney has a partial or complete temporary loss of function as a result of congestion, edema, and inflammation.

The urine contains blood, pus and albumin. These findings are necessary for a diagnosis.

Dietary Treatment: Only in the early days of the disease should the diet be restricted in protein intake, salt, and fluids. For a week, fruit juices and carbohydrates, with possible fluid restriction in failure of kidney output or edema; after the first week, the concern is a full maintenance of the nutrition of the patient, free, however, from any excess.

Bed Rest: Holton states that the function of the normal kidney is better in the prone position, as proved by correlated experimental evidence of osmotic pressure in the two positions.

The blood pressure gradually rises and stupor, convulsions, or coma terminates the life. Brain edema takes place. Autopsy findings show an increased weight of these brains

of 20 per cent to 30 per cent, from an intracellular edema. The N. P. N. retention, while increased, is not sufficient to classify a case with this type of convulsion, as having an uremic convulsion. The pathologic process is probably a brain edema alone. Its treatment assumes urgent demand. As the cerebral symptoms appear, or if a convulsion has taken place, two ounces of Epsom salts, 50 per cent solution by mouth or rectum, gives relief. If the blood pressure continues to increase, intramuscular or intravenous administration of 2 to 4 cc. magnesium sulphate gives more prompt aid. Spinal puncture, with the repeated withdrawal of 10 to 25 cc. of fluid, may be used. Calcium chloride or calcium gluconate is of very great service, and perhaps may supplant magnesium sulphate.

In 1934, Hirschfelder, of the Pharmacology Department of the University of Minnesota, reported some unfavorable possibilities from the use of magnesium sulphate and magnesium citrate. He found that a normal person in health has 2 mg. of magnesia per 100 cc. blood plasma. If a healthy person takes an average dose of Epsom salts, or citrate of magnesia, 40 per cent of the injested magnesia is excreted through the kidneys, but the concentration of the magnesia remains normal in the blood plasma. When kidneys are damaged, the administration of one or more purgative doses of Epsom salts may produce a hypermagnesemia. At levels of 11 mg. per 100 cc. of blood plasma drowsiness occurs, and at 17 mg., coma. An editorial in the Journal of the A. M. A. comments upon the possibility that many cases of death in the United States each year reported as nephritic coma are probably magnesium coma or convulsions. While I have not had this happen, it should be considered in therapy.

Fortunately, most cases of acute hemorrhagic nephritis recover. In some, the recovery is slow. The index to recovery is clinically the lowering of the blood pressure and the disappearance of the red blood cells from the urine. In some cases this takes a long time. If after prolonged rest the red blood cells and the albumin do not disappear, physical activity should be permitted in increasing amounts, if it does not cause an increase of the red blood cells in the urine.

TREATMENT OF CHRONIC HEMORRHAGIC NEPHRITIS

Chronic hemorrhagic nephritis is first of all a chronic disease, requiring a long period of management. It is always a progressive disease whether focal or diffuse. One of its signs is invariably the presence of albumin and red blood cells in the urine.

Treatment is dependent upon the cause: First, all foci of infection should be removed. Bowles, of the Children's Memorial Hospital, suggests that the cause in children may be due to faulty hygiene and poor nutrition rather than infection. Second, treatment must depend upon the stage of the disease and the symptoms demanding attention.

Dietary: Older ideas of treatment always stressed the kidneys. The almost universal diet used was low in protein and salt.

The modern viewpoint of Alving, Peters, VanSlyke, Addis, and others, is to treat the patient, treat the symptoms as they present themselves — edema, malnutrition, wasting, and anemia.

The protein intake should always be sufficient to give one gram per kilo of body weight, plus sufficient to compensate for all protein lost in urinary excretion, and plus enough to keep the patient in a highly nutritioned state.

An intestinal barrier exists to protein taken. All protein foods are split into fragments before their use. Blood plasma, from which urine protein comes, must first be resynthesized from protein nitrogen fragments. This point is often lost sight of in the desire of the physician to reduce the presence of albumin in the urine.

Dietary restriction of protein may lower the blood N. P. N., but the kidney function is not thus altered by the procedure. Clinical improvement, or other beneficial result, is observed in only a few cases. Give always an adequate diet that is rich in vitamin.

Edema: The edema of chronic hemorrhagic nephritis upon which treatment must be based, is caused by a lowered osmotic pressure and a variation in the electrolytic content of the tissue fluid. In certain cases, excess salt intake and cardiac decompensation may be contributing factors in the cause of edema. Salt restriction is imperative in any case that has edema. However, in the terminal stages of chronic hemorrhagic nephritis

where salt has been restricted, with vomiting or failure on the part of the kidneys to hold back the chlorides, the basic salts may be markedly depleted.

The two main salts in the body are sodium chloride and sodium bicarbonate. The failure of the kidney to hold back from excretion the sodium chloride, causes a loss of that substance, and if not replenished, the inability of the kidney to manufacture ammonia causes a loss of the sodium bicarbonate. The result is a depletion of the total salt content. With the loss of these salts, an isotonic equivalent of water is also lost. This means dehydration. If salt and water are not supplied at this stage, the patient may lose so much saline that desiccation is a threat to life. The kidneys have lost their elasticity. They cannot hold back water or salt, nor can they secrete water or salt only to a moderate degree. Oliguria in patients bordering on uremia may ensue.

Case Report: Mrs. S., age 60. Chronic hemorrhagic nephritis for over 6 years; enters for drowsiness and dehydration apparent. Bloor urea is 160 mg.; urea clearance, 20 per cent. Normal. She had excreted 8 oz. of urine in the past 24 hours. She was given 10 gm. N°CL 5000 cc. water. The drowsiness disappeared and in two weeks blood urea was 60 gm. per 100 cc. blood.

Medication for edema may be ammonium nitrate, or chloride and dextrose solution intravenously. The mercurial salts may be beneficial. Where a cardiac edema is superimposed, digitalis should be used without regard to blood pressure.

Sweating has been used for many years in chronic nephritis by clinicians. It does not eliminate the N. P. N. radicals, but concentrates them. In mild cases of chronic nephritis, patients may state that they feel better after sweating, because of resulting peripheral vascular dilatation. It should not be used.

Lashmeat suggests for the edema of chronic nephritis the use of tenth normal HCl. He comments that the alkaline ash increases edema, but that an acid ash intake decreases it.

Anemia: The use of iron or liver fractions does not seem to be of aid in this type of anemia. Blood transfusions of small amounts, 20 to 100 cc. repeatedly, improve the blood. A high-vitamin diet is also of benefit.

Bowles reports a marked benefit to children with the use of high-protein and high-vitamin content in the dietary, combined with improved hygiene.

CHRONIC DEGENERATIVE NEPHRITIS

The degenerative form of nephritis appears to be a part of a basic pathology of the tissues and capillaries of the whole body. Clinical and experimental evidence indicates clearly that these cases should be set apart from the standpoint of dietary and therapeutic management.

Edema: The normal plasma protein is about 7 gm. per 100 cc. of blood, of which 4.4 grams is serum albumin and 2.58 grams is serum globulin.

In the nephroses there is a constant and progressive distortion of the amount of plasma to a figure less than 7 grams and a variation in the ratio of plasma albumin and globulin. With a decrease of the plasma protein below a figure of 5.5 grams, or a plasma albumin below 2.5 grams, edema ensues.

This is one of the main causes of the edema of nephrosis. Other factors are a change in capillary permeability, chloride retention, and circulatory incompetence. Treatment of edema, therefore, must take into consideration this plasma-protein deficit. A degenerative nephritic may have a daily loss of 5 to 20 grams of plasma protein. This loss should be replaced. The diet must therefore contain 1 gram of protein to each kilo of body weight, plus protein sufficient to compensate for protein loss through the kidney, plus replacement for malnutrition and increased catabolism. Restriction of water is useless in this type of nephritis.

Medicinally, the edema may be treated by mercurial salts intravenously, urea in large doses up to 90 grams daily, and ammonium nitrate and chloride. When circulatory edema is present, digitalis should be used.

The dietary regulations in many cases seem to be of the greatest importance in the regulation of the edema. Where blood cholesterin is increased and the basal metabolism low, thyroid extract should be used. Large doses are often necessary.

Cases of degenerative disease of the kidney rarely show a pure case of nephrosis, although for a long period they clinically manifest the nephrotic syndrome, albuminuria and edema.

Many, with proper therapy, will for a long

time show improvement. Give a proper dietary, control the edema, and maintain a high state of nutrition, as intercurrent infections usually carry them off.

The frequent association of even the most pure form of lipoid nephrosis with definite chronic hemorrhagic nephritis is admitted. A nephrosis, or degenerative disease may terminate in an uremia as the end-stage of a chronic hemorrhagic nephritis. Yet, we are treating a nephrotic syndrome, and as such, it is improved by proper therapy.

ARTERIOSCLEROTIC NEPHRITIS

It is well known that some patients tolerate hypertension over long periods without evidence of renal disease. In other cases, rapid renal degeneration is added to the hypertension and uremia results in a very few months. As arteriosclerotic nephritics they present themselves in the terminal stages of the disease, because of the insidious nature of the renal condition.

There is not much to be done for the arteriosclerotic nephritic. Recognize the condition and its importance upon the total circulatory load. Restrict all other cardiac loads.

In conclusion, I quote Henry A. Christian: "Lucky it is that the physician has almost no ability to lower high blood pressure in patients with chronic nephritis."

DISCUSSION

DR. R. O. BROWN, Santa Fe, N. M. (opening): I should like to ask an explanation of the mechanics of the action of magnesium sulphate, calcium chloride, calcium gluconate, etc. I have tried them and sometimes get very definite results, but at other times I am not quite so sure. The nutrition of patients seems to suffer, though I have seen some very well-nourished children, particularly in the acute hemorrhagic type and in types of chronic nephrosis.

DR. FRANK H. AUSTIN (Carlsbad, N. M.): I should like to ask about the use of salyrgan. It has been reported that in cases of actual kidney damage, disastrous results have followed its administration intravenously. I wish Dr. Heller would tell us if he has had any experience of this kind.

DR. M. K. WYLDER (Albuquerque, N. M.): Dr. Heller brought out some very interesting points. The baby who has edema is usually the watery washed-out type of baby to begin with. I have checked up on quite a number of babies with edema to find out about their previous diet and have found that the Eagle-brand milk seems to be very popular. It is the easiest way to feed a baby and it is the best way to quiet one that I know of. Among the babies of the Mexican people, that have developed edema, I have asked, what were you feeding the baby before he became sick, and the answer invariably was "leche de aguila." Investigation has shown that most of the babies who died from edema were given foods running over 50 per cent sugar. This makes a big fat flabby baby who has no resistance to anything and consequently cannot stand any sickness.

DR. HELLER (closing): I regret that the value of this paper was somewhat restricted owing to the failure of the lantern slides. We need to have a clinical classification of nephritis in our minds. When a case comes under observation, its clinical manifestations should give us a clear concept of the physiology, course, and treatment.

Cases of acute nephritis usually get well without much more than is generally done. One very serious complication, edema of the brain manifested by convulsions, stupor, or coma, and an increased blood pressure, if treated by magnesium sulphate, calcium chloride or spinal puncture, changes a very grave case of acute nephritis into a favorable one.

Salyrgan has not shown favorable results in the acute nephritis of children. In chronic hemorrhagic nephritis with edema, or the nephrosis with edema, the mercurial salts are of extreme value. One should not use this medication in full dosage at first. Autopsy reports of cases having the mercurial salts used over a continuous prolonged period show no pathologic changes of kidneys that may be interpreted as evidence of damage from the use of these drugs.

I have stressed the treatment of the edema by proper classification of clinical nephritis and the mechanics of the edema produced.

I stress classification of clinical nephritis, the mechanics of the different types of edema, the newer plan of treatment by mercurial diuretics, ammonium chloride and ammonium nitrate. Finally, the physician should hold in mind that cardiac edema may be a complicating form, and digitalis should then be used. Acute hemorrhagic nephritis is a clinical entity, involving more than the kidney. Of chronic hemorrhagic nephritis and nephrosis, this is also true.

HEALTH SURVEY IN NEW MEXICO
Incidents of the Survey

H. S. A. ALEXANDER, M. D.
Santa Fe, N. M.

(Read before the Annual Meeting of the New Mexico Public Health Association, July 18, 1934, at Las Vegas.)

In studying the results of the recent health survey, I imagine most of us find considerable food for thought, in the number of children who react to the tuberculin test, and the pos-

sibilities of future active tuberculosis contained therein.

It might be well at this time to consider some of the more recent opinions on the use and value of the tuberculin test.

Throughout the survey the Mantoux test was used—namely, the intradermal injection of one tenth of one cc. of one in one thousand old tuberculin. The test was read at the end of forty-eight hours and, although many preschool children were given the test, the great majority were school children from entrance to fifteen years of age.

The positive reaction shows a raised edematous area at the site of injection and a varying amount of reddening around that area. A strong or three plus positive is one showing an area of edema measuring fifteen millimeters in diameter and raised more than two millimeters, while surrounding the area of edema is a wide area of reddening.

The conclusions which may be drawn from the presence of a positive reaction and the value of the test are well put by Myers of Minneapolis, who says: "The tuberculin test is one of the most accurate tests discovered by man and it has recently developed into the most important factor in the diagnosis of early tuberculosis."

Pritchard states that a child reacting to tuberculin has one of three conditions: (1) a persistent exposure to the tubercle bacillus; (2) the infection established within the human organism and lying dormant or latent; or (3) the active disease tuberculosis.

With regard to the time element of the Mantoux test: "the interval between the occurrence of the infection and the establishment of a positive skin test may be short, probably only a few weeks or less."

Compare this with the view on x-ray findings. A minimum latent period of from three to six months may elapse between the occurrence of a tuberculous infection and the appearance of x-ray changes.

Pritchard further adds that the oft repeated remark, "Everyone has some tuberculosis," is not proved and such statements misinform the public and act as a detriment to health work.

Of the mode of action of the tuberculin test itself, he adds, "Although doubted by some authorities, there is a fair unanimity of opinion that the reaction is a specific protein reaction to be classed with local allergic and anaphylactic reactions."

In a more recent article, the author writes: "The person reacting to the tuberculin or intracutaneous Mantoux test, has been exposed either directly or indirectly to some person suffering from tuberculosis. Seeking the cause often results in finding an open case of tuberculosis in a person not previously suspected of having the disease."

Further conclusions drawn are: That the individual who reacted is known to have a focus of tuberculosis somewhere in the body. This focus may harbour living and virulent tubercle bacilli over many years or even a lifetime.

The positive test establishes the fact that the tissues are sensitive or allergic to the products of growth of the tubercle bacilli and the individual so reacting is a potential case of the reinfection type of tuberculosis. It is generally agreed that the adult type of tuberculosis rarely, if ever, occurs in individuals who have not had a childhood infection.

Chadwick says, "It would simplify matters if we spoke of the juvenile type of tuberculosis, which is the result of primary infection, and the adult type of tuberulosis, which is the result of reinfection."

As Dr. Buck has explained, the approach to the survey was through the school children, and the children themselves were given the Mantoux test, were measured according to the American Child-Health standard measurements, to establish their nutritional status; and in a number of the counties we were fortunate in having Dr. Mossman examining the eyes and Miss Smith testing vision.

The measurements were done by Mrs. Brown of the survey team, by the public-health nurse of the district in which we were working, and by very efficient volunteer help in every place we visited.

These measurements, I might add, seem to pick out the undernourished child with a great degree of accuracy.

In one particular county, the biceps muscle measurement seemed to be out of proportion to the size of the children. I overheard one child explain this with a sigh—that they were from chasing and killing grasshoppers.

One youngster in the cattle country further

south, looked up with a serious expression just as I was about to give him the Mantoux test, and said, "Is it true they shoot us if this is positive?" Inquiry brought the reply, "Well, that is what they do with cows, isn't it?"

It is interesting to note the wide variation in the percentage of positive reactions, as they are modified by the location and possibility of exposure of the children, ranging from around 6 per cent in the ranch country to 28 per cent and 30 per cent around the health-seeking centers.

That it is possible for tuberculosis to reach a very far-advanced state without recognition, was brought out by finding in three different localities three cases of terminal miliary tuberculosis, in each of which this was a first diagnosis of tuberculosis. All three of these were members of large families and every child in these families showed a strong positive reaction to the Mantoux test. Knowing, as most of us do, the tendency of neighbors in the Spanish-American communities to take all the children and visit the sick, this type of case might lead to a widespread initial infection amongst a large group of children.

It was quite interesting to read, a few days ago, an article by Freilich and Ragins on the subject of admissions to the Cook County hospital, for tuberculosis. They state: "Admission for tuberculosis among Mexicans who are coming from Old Mexico, was fourteen times as great as in the general population, and further, the death rate among Mexicans in Cook County is six times as high as the average death rate in the general population."

I do not know whether I would assume too much if, considering the high rate of "seeding" of the Mexican children, brought out in this state, I should say that what is found in Cook County is an example of what happens to the positive Mantoux children when exposed to the less favourable environment and conditions of occupation found in the city.

The one-time tendency to think of tuberculosis in terms only of hectic flush, extreme emaciation, and so forth, was brought out in two rural communities where two young girls were brought for examination showing this state. Chest examination in each was negative and it was interesting to discover on further investigation that in each the urine showed large quantities of sugar. In one isolated village an old man was brought in who not only showed a marked glycosuria, but in addition had a gangrene extending almost to the knee.

An interesting group came for examination at Anton Chico. A little woman of sixty-eight arrived, bringing with her, her mother and grandmother. It rather reminded me of the newspaperman's search for the oldest inhabitant in a Devonshire village. Having run down what he imagined was the oldest inhabitant, he proceeded to question him. "So you are the oldest inhabitant?" "No," was the reply, "you oght to see father." "Your father, where is he?" "Oh, he is up on the roof helping grandfather."

Many recent articles have been published dealing with the initial tuberculous infection in children and the apparent complete recovery from that infection. They agree that the greatest danger is in the reinfection and that the most common source of this is within the family. In other words, an open case of tuberculosis within the home and the children are constantly and freely exposed.

In our own endeavors to trace the source of the infection in children who showed strongly positive reactions to the Mantoux test, several instances demonstrated the necessity of prolonged and careful inquiry. In the health-seeking areas this was comparatively simple. One adult from the family would come for examination and explain that husband or wife, as the case might be, had come to this country on account of tuberculosis. However, in other groups, the demonstrating of the possible source was not so simple, and I think that three cases show this well.

The first was a group of three children who all reacted strongly to the Mantoux test. The routine examination of both parents, an elder brother, and an elder sister, was carried out without finding any possible source. Questioning as to other adults who lived in the home, brought out the fact that one grandparent resided there. He was persuaded to come for examination and revealed an extensive anthracosis with a chronic active tuberculosis superimposed.

The second group again showed three children strongly reacting. Four adults in the family were examined, with negative results, and it was only accidentally that another child

member of the family was discovered, who had an unresolved pneumonia and an active tuberculosis at the apex—the probable source at least of the seeding in the other children.

The third group was, I think, the most interesting in view of Pritchard's conclusions that "there must be a persistent exposure to the tubercle bacilli". Six children from the same home were given the Mantoux test. Four were positive and only the two youngest were negative. The father and mother were examined and found free from tuberculosis and it was only the rather intelligent interest of the father which allowed the completion of this group. The father, Spanish-American, explained somewhat in this fashion: "I do not think you understand, Doctor. My wife and myself were both married before. These two children are her children and her first husband died of tuberculosis. These two are my children and my first wife died of tuberculosis. While these, the youngest, are our children and you say that we do not have "el phthisis."

It might be well at this time to give you a typical group of the findings at the end of two four-day periods.

The following figures give an idea of the work done and the material collected: The total number of Mantoux tests given was 612, of which 465 were negative and 147, or 23 per cent, were positive. All of these children were checked over as to their nutritional status and the largest proportion had their eyes examined and tested.

The total number of bloods taken for Wassermanns was 200, of which 186 were negative, thirteen were positive and one anticomplimentary; giving us a percentage in this district of 6½ per cent positive.

Eighty-two regular health examinations were made and, of these, seventy-four were negative, four were suspicious, four definitely had tuberculosis.

Under the heading of special health examinations, when parents or other members of the family came for examination because one or more of the children reacted to the tuberculin test, we find: Total examinations 125: 115 were negative, six were suspicious, four had definite lesions..

In only one district did I feel dissatisfied with the findings as to the origin of the initial infection in children as manifested by the Mantoux test. This was in a small number of children from the ranch country in the southern part of the state. It was noted that the reactions were generally mild and, almost without exception, we found no evidence of tuberculosis amongst the adult members of the family. On further inquiry, the one fact which seemed to be fairly constant was that the milk supply for these families was from a single cow and that the cow had never been tuberculin-tested.

It is interesting to know that recently considerable work has been done in the University at Albuquerque, investigating the staples of the Spanish-American diet. In those districts where the diet tended to consist largely of the local products grown in the garden and field, the nutritional status of the children was high and adults were uniformly well nourished. In the last rural district we visited, I had expected to find a similar condition and was disappointed to find it otherwise.

As Doctor Buck has explained, blood specimens were taken from all who were willing to have this done, as part of the routine examination. The results of the examination of these specimens, I think, speak for themselves.

On several occasions I have heard the criticism of the blood survey done by Dr. Walter Clarke, that it was a picked cross-section and showed a higher percentage of positives on that account.

In the 1400-odd bloods taken during the health survey, the individuals came either because of a suspicion of possible tuberculosis, or because one or other of the children had a positive reaction to the Mantoux test. In this group the average incidence of positive Wassermanns is higher than in Dr. Clarke's survey.

I cannot say what your reaction may be to the high percentage of positive Wassermanns found during the various surveys, but I personally feel that in the past I may have neglected many opportunities of making use of the State Laboratory and other laboratories throughout the state.

If I may judge from the willingness of those who attended the clinics, the people themselves are anxious to know if they may be

suffering from Dr. Walter Clarke's aptly used "sangre impura."

And, if I may confess it, I personally learned from the results of tests of blood specimens taken from individuals I had examined physically, that syphilis, "the great imitator," has a way of imitating perfect health.

LOCAL HEALTH ACTIVITIES IN TEXAS

JOHN W. BROWN, M. D.,
State Health Officer,
Austin, Texas

(Read before the New Mexico Public Health Association, July 17, 1934, at Las Vegas, N. M.)

Mr. Chairman: Your state health officer has asked me to present to you some of the health lessons which New Mexico can learn from Texas, with particular reference to how you might obtain trained health workers in the rural districts. I shall not attempt to teach you anything, but shall merely sketch briefly some of the things we have attempted in Texas in an effort to arouse interest in and establish locally, a self-sustaining health service. We have had only fair success, hence, I would not recommend that you use Texas as your model.

At this time we have only seven counties in Texas with full-time health departments or health units. These county units are standard with respect to personnel and activities. Two of these are city-county units, which means that they include the county seat in the organization and in each case the county seat holds more than two-thirds of the population of the entire county. I refer to the Amarrillo-Potter County unit, and the City-County Unit at El Paso.

In addition to the county units, we have thirteen city health departments which employ, in addition to other personnel, a sanitary engineer or a trained sanitarian. This gives us a total of fifteen counties with local sanitary inspection service, out of a total of 254 counties in the State. Although this percentage is rather low, we must remember that almost half the total population of the State lives in these fifteen counties.

As in most states, we have promoted health work in the cities and towns more zealously than in the counties, not because conditions were any worse in the towns but because we could reach the greatest number of people by working in the population centers. The regular personnel of the State Department of Health has never been sufficient to permit going into the rural districts in a concentrated way.

WORK LARGELY EDUCATIONAL

Because we believe that public health protection must be largely exercised by local authorities, we have attempted to assist in providing a trained personnel for those towns and cities desiring to provide health protection. The State Department of Health early recognized the importance of having trained and competent men in charge of public water supplies in the State, and to that end has conducted annual short schools for the past eighteen years. We have probably trained during that time some 200 operators who are still employed at such jobs, and of these during the past two years sixty-seven have merited an operator's license. The licensing of water-plant operators is a voluntary procedure which has grown out of the annual short schools and the activities of the Southwest Water Works Association, in which Texas maintains a live state organization. This Association was organized by the State Department of Health. It has been placed on a self-sustaining basis, is fairly permanent, and publishes annually the proceedings of the short schools.

Along with the training of water-plant operators, some work has been done toward the training of men to operate our sewage treatment plants. This phase of training will be expanded in the future. These training schools have been financed in part by appropriations made to the State Department of Health, but the Association itself has been very active in securing attendance and in committee work which has tended to raise the standard of qualifications for our plant operators.

The Department has also had a hand in sponsoring the Texas Public Health Association which is now in its twelfth year, and is affiliated with the American Public Health Association. Annual meetings are held for the benefit of health workers at which time special sections are devoted to laboratory workers, public health nurses, and milk inspectors.

Through these short schools and other special shorter training periods, we have trained the milk supervisors for our standard milk ordinance towns, 122 in number. The success of the standard milk ordinance in Texas has been largely due to the training of these local men, as we have never had more than three men in the Department who devoted their entire time to milk supervision.

We have attacked this problem from still another angle. Knowing an untrained sanitary inspector was of little value to his health officer or the community, and that towns having less than 8,000 population could not afford to employ one man on dairy inspection, another on mosquito control, and still another to supervise swimming pools, plumbing, water supplies, and sewage disposal, we have asked our educational institutions to set up training courses that would fit a man for a combination of duties. Following this request, Texas A. & M. College has for the past six or seven years offered courses in sanitary engineering, with which may be combined city management dairy husbandry, food sanitation, plumbing, and the like. Some forty men have been graduated from these courses and have been absorbed by our cities and counties, as well as in commercial enterprises.

We find that we have no difficulty in selling city officials on the idea of employing a well-trained sanitary inspector when we point out to them the economy of such service and the work that can be accomplished. We recommend to them men with training, practical experience, and a good personality. When a local man is appointed who is untrained, we offer to take the man and give him instruction both in the field and at the Department offices. This has proved quite helpful.

We shall continue to urge young men in Texas to prepare themselves for sanitary inspection jobs by taking the prescribed courses at our colleges and by attending these supplementary training schools just described.

C. W. A. WORK PROGRAM

In addition to the regular health service discussed above, we might call your attention to the work accomplished in Texas under the C. W. A. regime and with the aid of the United States Health Service. Texas shared with other states in the rural sanitation program which the Public Health sponsored and supervised in cooperation with the National Recovery Act, and through this assistance was provided with four area directors of sanitation and forty district sanitary supervisors. Under this personnel, county sanitary supervisors were placed in all counties which had sufficient man power to authorize setting up the C. W. A. work program, or about 245 counties. All these men were given some training in their duties, although, in the haste to put men to work, some incompetents were necessarily employed. This combined Public Health Service and C. W. A. personnel worked on rural sanitation projects from December, 1933, until March 29, 1934, when all C. W. A. projects were suspended. The Public Health Service personnel was then reduced to seventeen district supervisors, and four area directors; all county supervisors being dismissed. Since that time about fifteen counties have provided out of their own funds for sanitary supervisors. Work performed has been largely the construction of improved pit-type privies at farm homes and rural schools, although some improvements have been made of drinking-water supplies.

MALARIA CONTROL ACTIVITIES

In addition to the above C. W. A. activities, we carried on simultaneously a mosquito eradication campaign, for the same period, using an assistant state director, nine district supervisors, and twenty-nine local supervisors. These men worked in the 145 counties in the State that are recognized as the "malaria belt." During the period 151,854 laborers were used from C. W. A. rolls. They moved 1,083,815 cubic yards of dirt in the construction of 3,300,-171 feet of lateral ditches, and 889,861 feet of sub-lateral ditches. They also cleared some 7,737 acres of land and grubbed 7,767 acres.

At the close of the C. W. A. period, the malaria-control personnel was reduced drastically. We have retained the assistant state director, five district supervisors, and three local supervisors. At present activities are being carried on in only 133 counties, and the work consists of drainage, screening campaigns, house-to-house inspection for breeding places and screen repairs, malaria carrier detection, and a general educational program. Malaria carrier detection is being carried on

in the eighty-four counties in which we found the heaviest infestation of malaria.

We have assurance from the Public Health Service that this supervising personnel for both sanitation work and malaria control will be furnished until January, 1935. After that other arrangements will have to be made. The activities of the two divisions are fast being dovetailed into the rehabilitation program of the Texas Relief Commission that is just now getting under way. We have induced the Texas Relief Commission to require proper screening of homes and the construction of an improved sanitary pit privy in their improvement plans.

While the labor that has gone into the improvement programs outlined above has been largely "relief labor," many hundreds of individual home owners have now become interested and in recent months "free labor" has been used. We are prone to feel that the idea of sanitary improvements at the farm home has begun to take root in the minds of our people. We are hoping that future State appropriations will make it possible for us to continue to furnish some supervision of this type of work, but whether we have any county or district sanitarians one year from this date is, of course, highly problematical.

THE VIRGINIA PLAN

In this connection, we might call attention to the method that has been employed by the Virginia State Department of Health in providing local sanitary inspection service. In that state they have worked on the basis of matching funds. The county appropriates $1,000 and this is matched by another $1,000 by the State and the United States Public Health Service. From this budget is provided the salary of $1,200 a year for a sanitary inspector and the remainder is applied on traveling expense, office supplies, and other necessities.

In addition to the county inspectors, the State is subdivided into districts comprising four or five counties. Over each group is placed an experienced officer of the Public Health Service whose duty it is to supervise the work of the "sanitary demonstrators," to secure the passage and enforcement of local ordinances and regulations, to carry on educational work through public addresses and popular illustrated lectures, to arrange and carry out cooperative health measures with county boards of supervisors, county boards of health, and other organizations and agencies concerned with the improvement of the public health. The cost of this supervisory service is not charged to the $2,000 budget mentioned above. In some instances the local budget is supplemented by the Red Cross chapters and civic organizations.

Information on the Virginia set-up was furnished by Dr. I. C. Riggin, State Commissioner of Health of Virginia.

PUBLIC HEALTH NURSING SERVICE

In addition to the work of local sanitary inspectors, we have a public-health nursing service which may be of interest to this group. In the employment of regular county nurses, where the county cooperates with the State Department of Health, it has been the policy of the Department, for the last several years, in the appropriation for a county nursing service, to set aside one-half of the budget, which amount of money is matched by the county. This makes the complete budget provide for a twelve-months' service.

The Department reserves the right to pass on the qualifications of the nurse selected and to direct and supervise the nursing program which is inaugurated. Until our present economic situation forced the legislature to reduce appropriations for the Department very drastically, we have employed, on an average, twenty-five nurses under the matching plan. It has been the policy of the Department to withdraw gradually the State's appropriation after the second year of an established nursing service, asking the county to assume a larger part of the budget year after year until it has assumed full financial responsibility, but at this time we are trying to keep a small amount of State funds in the budget of each county nursing service. We have done this because we have found that, when the State withdraws all financial aid, local politics and other conditions in the county cause the service to go backward. One reason for this is that the county sometimes employs a nurse who has not acquired adequate training or experience in public-health nursing.

At this time we have five itinerant nurses, assigned to districts in the State, who act in

an advisory capacity, in addition to conducting itinerant nursing services in the various counties not having full-time nursing service.

C. W. A. NURSING PROGRAM

When the Civil Works program made it possible for counties to employ nurses, it was decided that the selection of the nurses and the outlining of their program should be done through the State Department of Health. It was not possible to find a sufficient number of nurses with adequate public-health training and experience to fill these county appointments; hence, we were forced to place graduate nurses who had no public-health training. In so far as was possible, these nurses were contacted and instructed regarding a few special phases of the work which they might do, but they were not allowed to attempt to conduct an all-round public-health nursing program. During the period of three months their time was devoted principally to a program of immunization against diphtheria. By securing the cooperation of the county health officers and the county medical societies, in most of the counties we succeeded in conducting a fairly good piece of work, even with this untrained personnel.

Under the C. W. A. plan, we employed some 207 county nurses for a period of three months, and through their efforts were able to immunize 73,663 children against diphtheria, 23,990 against smallpox, 16,266 against typhoid fever. In addition to the immunization program, these nurses were required to do a great deal of social-service work among those persons on direct relief.

At the conclusion of the work we were of the opinion that at best the results of the program thoroughly demonstrated the importance of employing nurses who are especially trained for public-health work. .

In concluding this paper, may we say that a health officer must have the necessary machinery with which to carry on his work if he hopes to perform with credit to himself and his profession. We consider the trained sanitarian and the trained public-health nurse a part of that machinery, without which the health officer is hampered and the results of his own efforts are in large part nullified.

THE PRESENT STATUS OF X-RAY AND RADIUM THERAPY IN TONSILS

J. S. SUMMERS, M. D.
Jefferson City, Mo.

(Read before the Kansas City Society of Ophthalmology and Otolaryngology, Nov. 16, 1933.)

I have chosen a subject in which there is some controversy. My purpose is to give the facts and personal experiences and opinions of some of my colleagues and myself on the present status of radium and roentgen-ray treatment of diseased tonsils.

I want to say in the beginning that radiation of tonsils is a treatment and not a surgical operation. The treatment of tonsils by radiation is based upon the fact that they are composed largely of lymphoid tissue, and that lymphoid tissue is one of the most highly radiosensitive tissues in the body, while the fibrous and surrounding tissues are very resistant to radiation. This difference in sensitivity of tissue to the rays makes it possible to radiate the tonsil with a suitable dosage and destroy or atrophy the lymphoid tissue without injury to the fibrous and surrounding tissue. It is especially indicated in diabetics, kidney lesions, Bright's disease, endocarditis (chronic cardiac lesions), rheumatic fever, exophthalmic goiter, asthma, chorea, incipient and advanced tuberculosis, hemophilia, status thymicolymphaticus, fear complex to operation or any condition which lowers the patient's general resistance so as to make an operation inadvisable. In such cases radiation is a valuable therapeutic measure and a satisfactory substitute for tonsillectomy. It can be done with safety, as the only factor which makes a case suitable or unsuitable for radiation lies within the tonsil itself. I find radiation therapy of great value in borderline cases, where the tonsil is not sufficiently diseased to advise an enucleation, and nature needs a little help to atrophy the tonsil normally. One radium treatment will do more good than many of the routine office treatments that are usually given.

ROENTGEN TECHNIC

In 1921, Dr. W. B. Witherbee of Rockefeller

Institute of Medical Research, worked out a roentgen-ray technic for treating tonsils. This technic, sometimes with slight modification, is the one generally used. It is as follows:

Seven-inch spark gap, five milliampere current, ten-inch distance, four minutes time, filtered by three millimeters of aluminum and one millimeter of leather. Treatments are given every two weeks until six or eight treatments are given. A piece of sheet lead, with an opening 2 by 2½ inches, is used for protection of the head and face. The patient lies prone on the table with the head turned flat to one side. The rays are directed toward the tonsil, entering through the hole in the lead, which is just below the ear and behind the angle of the jaw.

Dr. Witherbee and his co-workers treated several thousand cases. He was very enthusiastic about the treatment and reported good results in 80 per cent of his cases. He states that there are no contra-indications for radiation of diseased tonsils.

RADON TECHNIC

I have selected the technic used by Dr. J. Coleman Scal, as one of the best. He uses either one 33-millicurie, or two 1.5-millicurie removable platinum radon emanation seeds. The seeds are sterilized by boiling. They are 4 millimeters long, and 0.8 millimeters in diameter. The walls are 0.3 millimeters thick and filter out 98.5 per cent of the beta rays. He uses the Joseph Muir radon-seed implanter, burying the seeds two millimeters below the surface of the tonsil and in such a position as to make the radiation as uniform throughout the entire tonsil as possible. He reports better results by using the two seeds. For the purpose of removing the seed, a silk thread two centimeters long is left attached. The seeds are left in five days.

A 3-millicurie platinum radon seed will deliver a dosage of 20 millicurie hours in a little over four days. It loses its strength at the rate of 0.747 of one per cent each succeeding hour, or, one-half of its strength in 3.85 days and practically all in four weeks. This will radiate four cubic centimetrs of lymphoid tissue, or the equivalent of a tonsil two centimeters in diameter, without damage to the fibrous and surrounding tissues.

If platinum radon seeds are available, it is my opinion this would be the method of choice in radiating tonsils.

MY TECHNIC, RADIUM NEEDLES

In my office I use ten milligrams of radium sulphate in a platinum needle two centimeters long, with walls 0.2 millimeters thick, threaded with dental floss. After swabbing the tonsils with a strong solution of novocaine, I insert two needles into each tonsil in such a position as to give as equal distribution of the radium rays throughout the entire tonsil as possible.

There is very little pain in inserting the needles, and none after they are embedded. They are left in about three hours, varying the time somewhat as to the size, shape, and consistency of the tonsil. The number of treatments vary from one to four, and they are given three weeks apart.

It is probable that the use of smaller strength needles, in greater numbers will give more uniform and better results.

QUOTATIONS

I wrote to a number of leading men who have been treating tonsils by radiation, and I am giving you a gist of their opinions.

W. D. McFee, M. D., of Boston: "I have found roentgen-ray treatment quite satisfactory, particularly in the case of young children."

Harold G. F. Edwards, M. D., F. A. C. P., Shreveport: "I have treated hundreds of cases with roentgen ray and feel that there is a definite place for this type of treatment. It is not a panacea."

John S. Derr, M. D., Frederick, Md.: "I have treated 290 cases with roentgen ray in the past seven years. I can say without reservation that our tonsil work has gone over well. It not only shrinks and sterilizes the tonsils, but clears the pharynx and posterior nares. Out of the 290 cases, not over five cases do we know of have been operated on for their tonsils."

James W. Babcock, M. D., of New York City: "Judging from articles published, the effects to be expected from roentgen therapy in chronic tonsillitis are a reduction in size due to diminution of the lymphoid tissue, and an increase, relative if not actual, of connective tissue, resulting in an opening of the mouths of the crypts and their sterilization by improved drainage. Other lymphoid tissue in the

pharynx and naso-pharynx is also supposed to disappear. A strong point is made of this, as it is difficult or impossible to remove all of this tissue surgically. Roentgen therapy would be the treatment of choice on account of the lack of pain, loss of time from business, and the admitted possibility of some more or less dangerous complication of an operation, if the results obtained were satisfactory. My opinion of the value of this method has not changed, and it does not seem to be popular in this locality at present."

W. Warner Watkins, M. D., Phoenix: "I am still partial to x-ray treatment of tonsil disease of the hyperplastic type. In my opinion, radiotherapy is not usually indicated in the type of tonsil disease in which surgery is indicated."

Harry B. MaGee, Peoria: "The patients seem pleased and send their friends. I personally see a big field in cases where it is indicated."

Ira O. Denman, M. D., Toledo: "After several years' experience with some substitutes for tonsillectomy, I still find myself employing surgery in the majority of cases. Of the substitutes I approve of only one, and use it in selected cases, that is x-ray. The cases to which it is best adapted are of the variety of tonsils in which we find a predominance of lymphoid tissue over the fibrous sub-structure. Such tonsils can, I believe, be thoroughly normalized by x-ray treatments if intelligently and thoroughly carried out."

Francis Carter Wood, M. D., Institute of Cancer Research, Columbia University, New York City: "I enclose copy of a paper written by my associate at St. Luke's hospital, which is, in my opinion, much less optimistic than the facts warrant. I should say that practically all children with hypertrophied tonsils are enormously benefited by radiation. I think the results are just as good as surgical removal, and infinitely cheaper. I get a large number of children after tonsillectomy who still have colds and bronchitis and show granular throats with sago-like nodules. A few treatments dry these up and they stop having sore throats. Children who have had repeated quinsies, or who are going through acute attacks, should not be rayed. Adults do not give as good results as children because the tonsillar tissue is often largely fibrotic, and therefore it is impossible to produce atrophy, which is the chief agent in therapy. Nevertheless, I have rayed some old arthritics with astounding results. All in all, I think the failures with radiation are no greater than the failures of surgery. Many of my cases have been followed for eight or ten years. Some children have again had some hypertrophy and have been treated with good results, and in some I have had the tonsils taken out with equally satisfactory results. In other words, with the exception of the peritonsillar abscesses in which the tonsils should always be removed, x-ray is just about as good as surgery."

French K. Hansel, M. D., St. Louis: "I have reviewed literature in Archives of Otolaryngology. Personally I have not had much experience with this method of treatment, but would recommend it in certain selected cases, particularly those of small tonsil stubs. I do not believe that this method of treatment should replace the surgical tonsillectomy."

J. Coleman Scal, M.D., F.A.C.S., New York City: "As to my opinion on radium therapy in diseased tonsils, I wish to say that by this method we have an adequate substitute for tonsillectomy in cases where surgery is contra-indicated. In those cases where surgery is contra-indicated, the implantation of radon seeds is my method of choice. With such treatment I have obtained a complete atrophy of the tonsils without any reaction or injury to neighboring structures. This method is painless, can be performed in the office, there is no postoperative hemorrhage or danger of lung abscess and no middle-ear involvement. After watching results for five years, it is my opinion we now have a satisfactory method for irradiation of diseased tonsils by means of radium in the form of radium emanation. Results were so uniformly good as to leave no doubt that we have a highly efficient method of treating with radium emanation inoperable diseases of the tonsils. I still rely on surgery for the usual uncomplicated case unless it is for the removal of tonsil tabs or lingual tonsils."

Joseph Muir, M. D., F. A. C. S., New York City: "I am in full agreement with all of Dr. Scal's conclusions."

John H. Vaughan, M. D., Amarillo, Texas: "A point our contemporaries make is that ton-

sils are very hard to take out after having been irradiated. This is not true. They are fully as easy to remove as those which have not been treated. I am of the opinion that when we get less desire to cut, there are going to be more tonsils cured with radiotherapy."

Paul B. MacCready, M. D., New Haven: "At the present time I see no excuse for treating tonsils by radium or x-ray."

END RESULTS OF RADIUM TREATMENT IN INFECTED LYMPHOID TONSILS.

After proper radiation of the tonsils, there is a marked destruction, atrophy and absorption of the lymphoid tissue, until the tonsil has been reduced to one-third or one-fourth of its former size. The fibrous tissue, a poor medium for bacteria, is matted down to a small firm hard mass. The crypts become shallower, more open, and many of them obliterated. This gives excellent drainage and the pathological bacteria of the crypts largely disappear. It is rarely I find a crypt sealed over with cicatricial tissue, and infection shut in. There is no scar tissue or deformity of the palate and the pharynx. The capsule of the tonsil is saved and protection and support to the pharyngeal constrictor muscles is kept. Recurrent attacks of tonsillitis and frequent sore throats are eliminated in practically all cases. Arthritis and joint symptoms are remarkably relieved with two or three weeks. The patient feels better, that tired feeling and achy pain is gone, he gains in weight, pep, and ambition.

I think the end results in my cases are about the same as those described by Dr. Scal. Many of the highly lymphoid tonsils melt away until it takes close inspection to tell whether they have not been enucleated. A highly fibrous tonsil will be benefited by radiation, but results are not good and the treatment is not advised.

In the few tonsils I have enucleated after radiation, I have found no more adhesions nor experienced any more difficulty in their removal than with a tonsil not radiated.

CONCLUSIONS

In my practice I find that, in properly selected cases of diseased lymphoid tonsils, in borderline cases, and in cases where the surgical risk is too great, radiation therapy is eminently satisfactory to both my patient and myself.

There is no anesthetic with its complications. It is safe, efficient, an office procedure, economical, with no loss of time, no bleeding, few recurrences and no serious after effects. There is very little, or no, scarring of tissues, and the pillars are not injured.

In well-selected cases of lymphoid tonsils, I think I have uniformly as good results and as well-satisfied patients by radiation as I have by enucleation. The patients are not inconvenienced, they are relieved, they like it, and they tell their friends. If you do not want to treat tonsils by radiation, never start it, because your patients will not allow you to stop.

SOME PROBLEMS OF OBSTETRICS.

G. HEUSINKVELD, M. D.,
Denver, Colo.

(Read before The New Mexico Medical Society at its Fifty-Second Annual Session at Las Vegas, N. M., July 19-21, 1934.)

Let us first review the mechanism and the nature of the dilatation of the cervix uteri and the expulsion of the uterine contents. The uterus is a hollow smooth-muscle organ whose fibers have all the properties of smooth-muscle cells found anywhere, such as response to stimuli from sympathetic nerve fibers, irritability, and long-sustained contractility. Thus it is capable of rhythmic, coordinate contraction, as is seen in any other hollow viscus. It is interesting to note the architecture of the uterus and to see how the various groups of fibers each have their own proper and important function. There are, you remember, circular fibers forming a sphincter-like ring at the external os and another at the internal os. Then there are fibers extending from the fundus down, going into the cervix and also branching at the level of the internal os and sending out shoots laterally (like the stays of an umbrella) in all directions and attaching to the fasciae of the pelvis. These branch fibers are grouped in bundles called the broad ligaments, utero-sacral ligaments, and the ligaments of Mackenrodt, which is the name given to a thickening in the lower part of the broad ligaments. More fibers, arranged in whorls around the uterus, form the intricate

mesh-work which compose the body of the fundus uteri. The mechanism of this whole structure is evidently controlled by various sympathetic nerve plexuses and ganglia which are found distributed near the uterus and in various parts of the pelvis.

Now, it is evident that the reciprocal innervation principle of Sherrington—the best example of which is the biceps and triceps group—is found here. According to this great English authority, whenever one wills the biceps to contract, there is not only the proper impulse for that contraction, but at the same time an impulse for relaxation of the antagonistic triceps. And so in the uterus, when uterine contractions begin, there is not only a contraction of the fibers of the fundus, but at the same time there is a relaxation of the circular fibers which make up the cervix. There is a very interesting coordination here, which to my knowledge has not been sufficiently studied by our physiologists and anatomists, but we know it exists because we can trace it in this mechanism. There is then, with the impulse of contraction of the fibers of the fundus, an impulse of relaxation of the circular fibers of the cervix. Not only that, but those fibers which branch from the uterus toward the pelvix walls, begin to contract—thus lifting the mucous membrane of the fornices of the vagina away from the cervix and pulling the cervix itself in all directions toward the pelvic wall. This process of dilatation of the cervix is finally complete when, and only when, all traces of the cervix have disappeared and the canal of the vagina, the cervix, and the lower uterine segment, have assumed the same caliber as the body of the uterus itself. It appears, then, that the efficacy of the continued distending pressure of the presenting part, or the ingeniously conceived effect of the "hydrostatic wedge" of the bag of waters, may not have much to do with the opening of the uterus. It is instructive to study the gradual dilation of the cervix in shoulder or transverse presentation, when there certainly is no object near the cervix, and dilation proceeds in a normal manner and with only a slight delay, which can easliy be attributed to the abnormal shape of the uterus. On the other hand how many cases have we seen where a presenting part was continually pushing against the cervix and still dilation proceeded very slowly, if at all? Thus, we have the uterus emptying itself by a sort of disgorging mechanism wherein the fundus of the uterus becomes thicker as the contractions proceed. There is a characteristic sign in inevitable abortion which, as far as I know, is not mentioned in any of the recent textbooks: When the internal os is dilated, and the external os is still only slightly patulous, there is a peculiar dome-like retraction of the upper part of the walls of the vagina, due to the tension on these uterine ligaments that can easliy be detected by the examiner. This same thing is seen in the "frozen pelvis" of pelvic cellulitis. In both cases it disappears under anesthesia, but in the case of bleeding from pregnancy it is a sign of inevitable abortion. The sides of the uterus become gradually shorter, while the cervix recedes in all directions to the wall of the pelvis. The cervix becomes shorter and is really pulled back over the part of the fetus presenting, and the contents of the uterus are forced out by the propelling action of the constantly thickening upper part of the fundus. It is easily seen that this admirable mechanism is sometimes thrown entirely out of gear by various untoward circumstances.

Bearing in mind the facts just related, let us now think about a few of the obstetrical problems which we meet from time to time. First, inertia uteri. The term is self-explanatory. It simply means that the uterus refuses to function. This condition is divided into two classes, primary and secondary. In primary uterine inertia, the pains are irregular, of uneven duration, frequently colicky or cramp-like, exceedingly painful and wearing on the patient. Various causes may bring about this condition: Over-distention of the uterus by large amounts of water, or a large fetus, thins out the walls to such an extent that the contractions are feeble but very painful. We may have a patient edematous with a toxemia of pregnancy or other causes; the entire uterus shares in this general dropsical condition. The water in the uterine tissue may seriously interfere with the delicately coordinated process described above. Fibroids may cause a local disturbance, or inflammatory reaction or peritoneal adhesions may throw the entire mechanism into disorder. The fetal membranes may be tightly agglutinated to the internal os uteri and to the lower uterine segment, so that dila-

tation is impossible. At times this agglutination is the cause of early rupture of the membranes. A large placenta may, for a time, cause part of the uterine muscle to become inactive. A disproportionate pelvis may pinch a section so that the well-ordered action of the uterus is disturbed; thus, frequently we can detect a flat side to the pelvis by noting that the corresponding part of the cervix retracts more slowly than the rest. In a flat pelvis there is very frequently a thick edematous so-called anterior lip. Placenta praevia margilnalis very often throws the smooth action of the lower uterine section into disorder. Not infrequently, the sole cause of primary inertia is a distended bladder. In general, this state of affairs (if not due to over-distention, can be righted by the stimulating action of a very small dose, say three minums, of pituitary extract, or, if the case has gone long and the patient needs rest, by giving one-fourth grain of morphine. The important thing is to study the patient, determine the cause, and try to find a remedy.

Secondary uterine inertia is simply the exhaustion of the uterus. The uterus is relaxed, the contractions are feeble, and the patient has a small pulse and shows in general the symptoms of exhaustion. One need not inquire into the history because the picture itself is characteristic and pathetic. There is one great danger to the patient in this crisis: That she will be delivered before the uterus has regained energy to contract. If the patient is delivered in this state, after the uterus is emptied it will still lie inert and the fibers which surround the blood vessels and sinuses in the uterus (in the form of a basket weave and the sole means of hemostasis) will fail to contract and the patient will suffer an alarming loss of blood. The exsanguinated, exhausted patient is doubly open to the overwhelming invasion by the ever-present pathogenic organisms. It is much safer for the mother, and also for the infant, to gain rest by whatever means is at the attendant's command and to attempt delivery only after the uterus has shown signs of recuperation and renewed activity.

The mechanism of hemostasis in the uterus should be considered in giving various drugs to stop uterine bleeding. If the uterus is sluggish, we must at once find some means of stimulating the muscle fibers to activity. Pituitary extract is a drug of questionable value. True enough, it excites terrific contraction of the uterine muscle, and after brief activity there is a prolonged period of marked relaxation, when a patient may bleed into her own uterus. Unless the attendant is then vigilant, the patient will get into serious trouble without any warning signs. You all know the trick of controlling pituitary-excited reactions with anesthesia. Obviously, then, if the patient is anesthetized, the drug is useless. Personally, I seldom use it. There are several very active and non-irritating preparations of ergot, or its derivatives, which do not have this unfortunate property of pituitary extract, and which can be given hypodermically without any fear of causing abscesses or undesirable irritation. I much prefer these in my own practice.

There is one fact regarding the cervix that deserves especial attention. I said that a cervix is completely dilated when, and only when, its canal is of the same caliber as the vagina and the lower uterine segment. In oblique presentations and in breech presentations, it is of the greatest importance that we make no attempt to deliver until the cervix is completely dilated. I am convinced that, in many cases of breech extraction, the after-coming head gives trouble because the above formula has not been satisfied. The almost completely dilated cervix is greatly irritated by the passage of the body of the child. This irritation stimulates the appreciable remnant of the cervix to the contraction. When this remnant comes to the neck of the fetus, the power of contraction is exercised and it immediately closes down before the head can be delivered. This vise-like grip can be broken only by actual rupture of the cervix, or by the prompt and fearless use of the scissors. If the cervix be properly dilated, there is seldom any resistance to the after-coming head. In my own experience, I can look with regret upon several instances in which I did not satisfy the above formula before proceeding.

All of us at times deal with patients who exhibit various symptoms of toxemias of pregnancy. There has been an immense amount of investigation by able men on this subject and it is to be hoped that some day we shall have adequate means of dealing with this dreadful complication. Probably all pregnant women are more or less toxic, and the whole proposi-

tion is a matter of degree. Certain things, however, we must bear in mind. Those patients with histories of rheumatism or scarlet fever, will certainly bear careful watching through their pregnancies. Frequent urinalyses and blood-pressure observations are in order, as are such other procedures as the common sense of the physician will suggest. For all practical purposes we note three major classes of toxemia.

Occasionally we find patients who have been putting on excess weight, showing swelling of the ankles, disappearance of crowsfeet, and signs of general edema of the face, and sometimes of the whole body. Blood pressure may show systolic of 90 and diastolic 60, with a slow sluggish pulse. These patients are indeed in grave danger. The condition is due to some unknown poison which is circulating through the body of the mother and of the fetus. It is not at all uncommon to see these women die suddenly during labor, or shortly after, occasionally from embolism or from pulmonary edema. Their children, even in easy labors, suffer from intracranial hemorrhages. There is a very evident connection between toxemia in the mother and the presence of toxin in the baby which inhibits the coagulation of the blood; this results in extensive intracranial hemorrhages, icterus neonatorum, and melena. These patients can be greatly helped with some calcium salt given intravenously, or with rest, sunlight, codliver oil and calcium given by mouth.

The two forms of toxemia with high blood pressure have some practical points of interest. Those people who have histories of rheumatism will frequently run a blood pressure of 140 to 150 systolic and 90 diastolic; they show continuously slight traces of albumin, a few casts, and nothing much else. This is unquestionably a sign of distress of kidneys which have been impaired and are now trying to satisfy increased demands. As time goes on, the blood pressure rises, the urine remains thin and the number of casts probably increases; convulsions and coma may set in; in short, the typical picture of uremia. On the other hand, in an eclampsia and a pre-eclampsia (and, by the way, what is the use of calling a condition by one name up to the moment of a convulsion, and by another name from the beginning of the convulsion), there are heavy quantities of albumin, a scant, concentrated urine, and, strange to say, a relatively small number of, and frequently a total absence of, casts. With this differentiation of the two types of urine (while the prompt emptying of the uterus is the necessary thing in either case), the treatment should be considered from two points of view. In the first type we deal with it as with any other case of Bright's disease with its high blood pressure and the necessity for dietary supervision, since the blood pressure is high from physiologic necessity. In the second type, the blood pressure is up because the patient is poisoned and the toxin possibly acts as an irritant to the vasomotor mechanism. Do not interfere with the blood pressure in the first type, or there will be suppression of the urine. Reduce the blood pressure in the second type, and fill the patient with water until she shows edema all over, whatever other treatment you may find valuable in your experience, and there will probably soon be plenty of urine—and the outcome will be fortunate.

There is one other problem which meets us all on occasion, which I should like to examine for a moment. Subinvolution of the uterus is that condition in which the organ fails to recede to the size of the normal resting organ. This condition may follow full-term pregnancy, miscarriage, or abortion. The causes may be grouped in two classes—those due to infection, and those due to the retention of products of conception, or foreign bodies artificially introduced. When there is a pelvic cellulitis or local peritonitis, the uterus is generally spongy and contains a mucopurulent, foul secretion which is rather characteristic in some cases. In the case of retention, parts of the placenta or membranes, fetal remnants, blood clots and debris, lie within a uterus that is too sluggish to discharge itself fully. The best remedy for this to my knowledge is a combination of ergot, quinine, and strychnine. I use powdered extract of ergot, U.S.P., three grains; two grains of quinine bisulphate, and sometimes 1/40 grain of strychnine in a capsule, beginning with one every six hours, and gradually tapering off to one per day at about the fifth day. This combination has a very beneficial and tonic effect on the uterus and occasionally is all that is needed; however, whenever there is foreign material in the

uterus it obviously should be promptly removed. A dull curette, certainly no sharper than a loop of baling wire, should be used in this procedure. At the same time it is frequently beneficial to use a large (say 26F) rubber catheter with the tip cut off and the cut edge carefully rounded. Wash out the uterus with a salt solution at the temperature of about 100 degrees F., containing about three per cent or more of salt. Using a weak salt solution sometimes takes up the water-soluble toxins in the uterus and, with the absorption of the water, carries them right into the blood stream. The chill that follows is often a thing to remember. However, if you use a strong salt solution, the osmotic pressure is in the other direction and no chill will occur. Occasionally there is left at the placental site a huge group of fibers and tissue, the remnants of the maternal blood vessels, which ordinarily liquefy and disappear, but occasionally may persist as a foreign body for some time, causing continued slight bleeding and foul discharge. On bimanual examination, the uterus is found to be lop-sided, spongy, and with a large soft portion indicating where the trouble is located. The rest of the organ is rather firm. This can be carefully removed, but one must remember that it is as easy to go through this soft part of the uterus as it would be to go through so much cheese. These remnants of scar tissue will sometimes persist for months unless they are properly dealt with. It is to be remarked that the use of a dull loop (which I advocate for this work) is not at all the same as the indiscriminate use of the sharp curette, which must be decried in the management of all these types of cases.

DISCUSSION

DR. L. O. DUTTON, El Paso, Texas (opening): I was very glad to hear Dr. Heusinkveld take up the problem of toxemias. In conjunction with one of the obstetricians of our city, we have been doing quite an interesting investigation along the line of metabolic dysfunctions during the pregnant state. We have been trying to find out whether certain cases that were anemic failed to respond to ordinary therapeutic measures directed against that condition. We found many of these patients had a syndrome characterized by a mild hypothyroidism, low blood calcium range around 7 to 8, low blood pressure and low blood sugar. Placing those patients on mild or low doses of thyroid extract, calcium, and pushing their carbohydrate intake, they immediately began to take hold and build up. Further observation showed these women went through their pregnancies much more easily and free from toxemia. The whole delivery course was much better, with better condition of the baby. We found, after working out a good many patients along this line, that their whole tone is distinctly different from that of the patients who did not have the benefit of the study. We believe that a whole lot of toxemia and probably some eclampsia is being prevented by this method. Whether it will prove out in a course of years, I do not know; but certainly these people who have a low metabolism, low sugar, and low calcium, get through their pregnancies in a more satisfactory manner than formerly.

DR. HEUSINKVELD, (closing): What Dr. Dutton said is perfectly true. I hold that these people when they start losing weight are then in a toxic state and it is damaging to the baby. Those of us who work out in the country, do not have laboratory equipment and cannot deal with values. The characteristic signs of edema, low blood pressure, systolic and diastolic rates, are signals. The administration of calcium and low doses of thyroid extract has done very well. I wanted to call attention to the low blood-pressure group and to differentiate with the two high blood-pressure groups.

PREVENTION OF HEART DISEASE

MELDRUM K. WYLDER, M.D., F.A.C.P.
Albuquerque, N. M.

(Read before the New Mexico Medical Society, at its Fifty-Second Annual Session, at Las Vegas, N. M., July 19-21, 1934.)

Problems in medicine, as in all other lines of endeavor, have a way of occupying the center of the stage until they are partially solved; then they drop out of sight, as another problem becomes important.

In the early days in medicine, tuberculosis was considered the great menace of the human race. Medical literature, the daily press, and the magazines all painted gruesome pictures of the decline of our once powerful nation, unless the ravages of tuberculosis were held in check. Much valuable work was done until tuberculosis lost its place as captain of the men of death.

Study was then made of the cancer problem, with the result that many lives have been rendered less miserable through the early diagnosis of cancer. During the last few years, the heart problem has assumed magnificent proportions, with front-page publicity. We are

told that we will all die of heart disease if we live long enough,—which is probably true. Dr. N. S. Davis III, in a paper not yet published, stated before the College of Physicians at the Chicago meeting, that conditions in the circulatory system figured as a part in the cause of almost every death after forty five.

The large life insurance companies, tabulating as they do millions of deaths, are able to get a very good cross-section of the cause of death in this counry. Nearly everybody carries life insurance in some form, and these tabulations show the stupendous increase in cardio-renal deaths.

Heart conditions are by no means a new problem. Did not King Solomon in his Proverbs give the injunction. "Keep thy heart with all diligence, for out of it are the issues of life." (Prov. 4:23)

In order to attack the problem of prevention of heart disease, the study of the etiology becomes the paramount question. Most heart conditions will fall into one of the following classes: The congenital, the infective, the syphilitic, and the heart due to the involutional changes of age. Prevention of the congenital type becomes a prenatal problem, and there is no question whatever but that, with intelligent supervision of the expectant mother, a much higher percentage of normal babies can be produced. However, congenital hearts fall out of the later tables, as very few of them live beyond puberty.

To eliminate infective carditis, we should have to get rid of rheumatic fever and its associates or near kinsmen: chorea, tonsilitis, scarlet fever and, in fact, all the infections of the streptococcus group. The importance of rheumatism is well demonstrated, in a report by Seham[3], in which he found, in a study of 379 children with organic heart disease, that 18 per cent were congenital, 74 per cent rheumatic, and 3.6 all other causes. There were 4.4 per cent undiagnosed.

Our problem, then, becomes one of preventing the development of the rheumatic-fever group, and failing in this, of making the earliest possible diagnosis of these conditions, as early diagnosis with long periods of rest offer the best prognosis.

Glover[2] showed that rheumatic fever has shown a gradual decline since 1901. In England and Wales the rate fell from 67 per million in 1901, to 28 per million in 1928. He stated that there has been a similar fall in the United States, but this is in part explained by the inclusion recently of reports from some of the southern states where rheumatic fever is almost unknown. Christian and Longcope made comparative studies of rheumatic fever in Boston and Baltimore and found that it was not a problem in Baltimore, but that it was a real problem in Boston. This is a valuable point and families with rheumatic tendencies would do much toward perpetuating themselves by moving into the Carolinas, Georgia, or Florida.

Rheumatic fever and chorea account for only about 2 per cent of the deaths from all ages, but in children under fifteen they account for 18 per cent. This should drive the lesson home that the family doctor should be on the lookout with all children under fifteen in his care. The most pleasant preventive measure that has come to my attention was brought out a few years ago by some writer whom I have been unable to locate. He advanced the theory that, since strawberries contain small amounts of salicylic acid, by feeding strawberries freely we could prevent the development of rheumatic processes. If our strawberry growers were only as industrious as the California orange growers, no breakfast would be complete without strawberries, and the problem of infective carditis might be solved.

It is now generally believed that, once a rheumatic process is established, it persists for years—much of the time dormant, but that like tuberculosis it is active and quiescent but never dead; and that for long periods of time these children are absorbing small amounts of infection, most likely from the sinuses or tonsils, which cause a child to be just a little below par, languid, pale, not hungry, not sleeping well, nervous, restless—and finally developing heart symptoms.

Cases showing polyarthritis, rheumatic nodes, chorea, almost always develop cardiac symptoms. Sore throats are common in these cases but are not complained of as in adults. Coombs[4] believes that one-third of these rheumatic children are infected through the tonsil, and that the other two-thirds are the result of minimal infections slipping through the tonsil. In the study of the tonsil, doubtless many ton-

sils have been removed that should not have been, and many have been left that should have been removed. The argument is put forward that the tonsils are a protective organ, protecting us from infection, and should not be removed. An unknown writer quoted by Marshall[1] compares them to frontier forts that have fallen into the hands of the enemy and are no longer a protection but a menace and should be razed.

Infectious carditis varies in its mode of attack and development. It may develop with a distinct fever and run a course of days or weeks; it may run only a slight evening temperature, and it may develop with no fever at all. Increased pulse rate is indicative, but differentiation of neurotic from toxic is next to impossible. Even after carditis has developed, if recognized, there is still a chance, but it means a period of rest for weeks or months. Coombs took a group of children with carditis and fifteen years later not a vestige of cardiac trouble could be found. Even well-developed murmurs, heard both front and back, may entirely disappear. I recall a boy in my practice, about twenty-five years ago, who developed rheumatic fever with carditis. He was bedfast over a year and confined to his home another year, and now at thirty-seven years of age he is in good health and working every day as a telegraph operator. If these cases are diagnosed early and given long perids of complete rest, they may live for years and in comparative comfort. If a vocation which is not too strenuous is chosen, they become useful self-supporting citizens.

Scarlet fever, diphtheria, and streptococcus viridans account for some of these cases. Early and active treatment of diphtheria with sufficient anti-toxin to neutralize all the toxins in the body, will prevent the post-diphtheritic heart. With scarlet fever we have not yet a reliable remedy, as we have in diphtheria, and scarlatina still figures as an important factor in the development of heart conditions. While not affecting the heart directly, it acts indirectly through the kidneys. Hypertension and streptococcus viridans attack hearts that already have heart lesions. In these cases it then becomes particularly important to clear up all foci of infection—such as teeth, tonsils, and sinuses.

In the syphilitic types, the remedy is simple and effective but usually impossible to apply, as the average patient will not stick to treatment long enough to be amply protected. The diagnosis is easily made, and there is a varying period of from ten to fifteen years between the development of the initial lesion and the appearance of cardiac symptoms.

White[5] reports that he sees only about one-half the number of syphilitic hearts now that he did twenty years ago.

The heart damaged by hyperthyroidism should be eliminated, as the consensus of opinion now is that it is the increased demand of increased metabolism that wears out the heart, and not that the thyroxin has any purely toxic effect on the heart muscle. Early diagnosis and good surgery, with the intelligent use of x-ray, will prevent these cases.

Essential hypertension is a young man's disease and runs in families. Anyone coming from a family with these tendencies should begin early to avoid over-eating, with its attendant result of overweight.

Arteriosclerosis affecting the coronaries is a common cause of heart disease in the aged, but some families show a tendency to develop these conditions as early as the fourth decade, and members of these families have good reason to consider their arterial tree. They should not embark in strenuous vocations but should select occupations with small responsibilities, regular hours, and in which the other fellow has all the worry. Much rest is a great help in both the prevention and treatment of this condition. If the pulse rate is reduced by only ten beats per minute when the patient is recumbent, the amount of blood moved in an hour is about 36 liters less than when he is upright. Fatigue, then, is a great factor in causing both anginal pains and attacks. Rest and long vacations are both the remedy and preventive measure.

The ideals we hope to attain are, I believe, embodied in the conclusion of an address by Frankel[6], which I quote: "Whenever we can adequately protect the child against bacterial invasion, when we can give him clean heredity, when we can teach him personal hygiene and give him a proper mental attitude, freedom from care and worry, and opportunities for rest and recreation, we shall have entered that newer campaign which spells the post-

ponement of disease and the promotion of physical, mental, and moral health."

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DISCUSSION

DR. W. W. WAITE, El Paso, Texas (opening): I had a chance to argue with Dr. Wylder while coming here, as we had a discussion on the train. He has gone into a subject that has worried me a good deal. I have around 25 specimens of rheumatic hearts, one from a young man, about 24 years old, an athlete, who had done the hardest kind of athletic work, and suddenly broke down. Another is that of a traveling man who applied for life insurance but was turned down because he had a heart lesion, but he exposed himself to bad weather and had an acute attack and died. If these men had taken care of themselves as Dr. Wylder said, they would probably be alive today. A few years ago I went over all my rheumatic heart specimens microscopically and studied them for the presence of Aschoff's bodies, which were present in all but one case. This was a case of aortic stenosis in a person around 50 years of age, and no evidence of rheumatic infection, so far as Aschoff's bodies were concerned, could be found. Once you get a case of rheumatic heart disease, it nearly always stays with you. Now we study heart disease, study valves tnd listen for murmurs, but every one of these cases shows heart-muscle damage, and I feel we do not consider our heart-muscle damage enough —how much it has taken place—and this is the most serious part of the affair. We forget to measure the value of our heart muscle compared with the valve lesion. It is remarkable how patients can get along with a tremendous heart lesion as long as the heart muscle holds up. Long rest in bed is the best thing to help improve the heart muscle. We will be in a position to do more with these heart cases. And the same holds true in adult cases of heart disease, which are the most common, the cardiac infarct type, if they will stay in bed for long periods, and then after getting up will take it easy.

DR. C. F. MILLIGAN (Clayton, N. M.): Both Dr. Wylder and Dr. Waite mentioned long rests in bed as being beneficial. I should like to ask what would be considered as a long rest in bed for the average child.

DR. H. A. MILLER (Carlsbad, N. M.): I was much pleased with Dr. Wylder's paper and enjoyed it very much. There was one thing he mentioned—that heart disease is really a manifestation of a systemic infection; and I believe that is also true in nephritis. We notice that a great many high-pressure medical men die of heart disease, and sometimes I wonder if the psychic strain has not something to do with it. It seems to me that we Americans have not learned the art of living. We want to be at high speed all the time, both at work and in our pleasures.

DR. F. D. VICKERS (Deming, N. M.): I wonder if Dr. Wylder will be good enough to tell us if the state of tonsils has anything to do with heart disease in children.

DR. WYLDER (closing): I thank you all for the discussion. That heart disease and rheumatism are closely associated, there is no doubt. I do not know, and do not believe that anyone else knows, just exactly what is the cause of rheumatism. I believe Dr. Waite and I agreed on that point, at least, on the train this morning. If we knew the exact cause of rheumatism, we should be somewhere. A few years ago Homer Swift of the Rockefeller Foundation read a very interesting paper on rheumatism, at the Boston Meeting of the College of Physicians, in which he treated it as an allergic proposition. He went on the theory that the allergy manifested itself in the blood vessels and he showed photographs of the blood vessels almost closed for a short distance, and then with their natural lumen, and he considered that as perhaps allergic. The paper was discussed considerably at the meeting and it was essentially *the* paper of the meeting. That was some six or seven years ago and the paper gradually dropped out of sight and nothing further came of it. If we knew the exact cause of rheumatism and knew how to prevent it, we could go a long way.

As to the question how long to keep a child at rest, my answer is to keep him at rest as long as you can. There has been a very interesting piece of work done by a man whose name I cannot now recall, who found, with children, that instead of keeping them absolutely in bed, if you will seat them in a chair two or three times a day, with change of position, they will use up less energy than if they were in bed. A child gets tired of being in bed and rolls and kicks back and forth and fights with the bed-covers; so, to keep them at rest, they must be kept amused. An intelligent mother and efficient nurse can keep a child interested and keep him quiet. You should keep him quiet as long as you can—the longer the better.

The consensus of opinion seems to be that rheumatism, like tuberculosis, is a chronic condition, quiescent at times perhaps, but when you once get it, it may last for a period of years.

The question of Dr. Vickers in regard to tonsils is hard to answer. Some of our throat men think any tonsil you can see should be removed. Doubtless a great many tonsils should be removed that have not been and perhaps some have been removed that should not have been.

Another point that Dr. Waite brought up which is interesting, is our tendency to examine hearts

and describe valve lesions. Persons die of something else than the valve lesion, if the heart muscle is good. The important thing in examining hearts is to evaluate the heart muscle, if this can be done.

THE MANAGEMENT OF INTRACTABLE ASTHMA

REDFORD A. WILSON, M. D.
Thomas-Davis Clinic, Tucson, Arizona.

(Read before the Santa Cruz County Medical Society, October 8, 1934.)

A long-standing, chronic type of asthma, usually perennial, in which conventional means of treatment have proved to be of little or no use, may be considered intractable asthma. The patient with this condition arrives at the point where the attack goes on for days without relief; every breath is an effort; adrenalin has ceased to give any relief, and the patient is in a status asthmaticus.

This patient usually gives a history of the attacks having been in progress for hours or even days. He is usually found sitting up, elbows on a table or similar support, struggling for every breath. He is usually cyanotic. The face has a drawn, pinched appearance. The picture is too familiar to need further description.

The management of this case is enough to tax the ingenuity of any doctor. Briefly I shall outline what has proved to me to be the best procedure.

1. Change environment.
2. Administer dextrose intravenously.
3. Give chloral and bromide per rectum.
4. Do not give morphine.

As previously indicated, the usual sheet anchor, adrenalin, has ceased to be effective; the adrenalin, therefore, is discontinued temporarily. The first step of importance is to change the environment. There is always the possibility that the patient is sensitive to something in his own environment, even though he has been studied repeatedly for this sensitivity, with negative results. Hospitalization is preferable. He should be placed in a room which, as nearly as possible, has been rendered free of any possibly offending allergen. This is accomplished by having: A pillow and mattress covered with rubber sheeting; the floor bare; no curtains on the windows; and the furniture, floor, and walls absolutely free of dust. Only bedding made of long-staple cotton should be allowed. No wool blankets nor down comforters should be used. In seasons when pollen is likely to be in the air, a pollen filter, if available, should be utilized. Drafts should be excluded, although the patient needs liberal ventilation. It is also important that an even temperature be maintained in the room, for temperature changes aggravate this condition.

This patient has neither desired, nor has he been able, to take adequate liquids or nourishment. He is dehydrated and starved. Of all the important measures that can be used, I believe the intravenous administration of dextrose to be the most important. This may be used in various strengths and amounts. I find the optimum strength to be 10 per cent; it furnishes an appreciable amount of food in an assimilable form, and a sufficient quantity of water to overcome the dehydration. It is well to use two to four liters of this solution at one time, letting it run at the rate of about 500 c.c. per hour. Usually these two measures—change of environment and intravenous dextrose—will break up a status asthmaticus.

In addition to the starvation and dehydration, the patient is nearly always exhausted. This terrible, long-standing attack, with its omnipresent exhausion, suggests morphine to most of our minds. It is my firm conviction that morphine should not be used at this time when the same or better effect can be obtained by the use of chloral hydrate and bromides by rectum—without the dangers of the opiate.

Chloral hydrate, gr. xxv to xl, and potassium or sodium bromide, gr. xxx to lx, given slowly as a retention enema, will prove to be very effective in producing sleep and giving rest to the exhausted patient. Not infrequently this measure, combined with the first two mentioned, will bring about a cessation of the attack.

Many other drugs are used to terminate this type of attack. I will comment briefly on some of the more common ones. Sodium iodide is often very effective. Some authorities claim that this is of no value in emergency; that its action is slow, and that the same effect can be had by oral administration of potassium iodide. I differ with these authorities. In my experience, intravenous sodium iodide, one gm. in 20 cc. of water, has often proved valuable,

especially in those cases in which there is a dry, harassing cough in addition to the expiratory dyspnea. It will loosen some of the thick, white, tenacious sputum. After expectorating this mucus, the patient often begins to improve, and the attack diminishes.

Caffeine sodium benzoate has also been advocated, but in my experience it has been disappointing; however, I have used it in conjunction with an infinitesimal quantity of adrenalin, an amount which will stick to the sides of a syringe, which has contained and which has been emptied of adrenalin. If this caffeine sodium benzoate, together with the minute quantity of adrenalin, is given intravenously, it will often bring about the desired result.

Atropine given during an attack theoretically should be effective if we suppose that the condition is produced by vagus stimulation. On the whole, however, I have had little success with atropine.

Calcium has been advocated and used extensively. Experimental work, blood studies, and clinical application, have shown that it is of no benefit in asthma. My experience clearly agrees with this conclusion.

Aspirin and other coal-tar products are mentioned only to be condemned in a majority of cases. They are of too little value, at best, and potentially much too dangerous to be used in a crisis like this, because so many allergic individuals react violently to coal-tar products.

A discussion of the management of any condition should include important contra-indications as well as the indications. Contra-indications are even more important in intractable asthma than in any other condition. Morphine, the contra-indicated drug I intend to discuss, is the cause of more deaths in asthma than any other agent. If I should ask this audience how many deaths they have seen from uncomplicated asthma not treated by one or more doses of morphine before the patient died, I am sure the number reported would be small. Uncomplicated asthma is very rarely a cause of death. I am sure that, of the deaths asthma does cause, a great majority are preceded by an opiate. If that statement sounds exaggerated, I shall point out definite and undeniable reasons for such a statement, and then discuss them. We shall see that the morphine, instead of accomplishing beneficial results, aggravates the most serious symptom we are combating—improper oxygenation of the blood stream, in the following ways: (1) Morphine slows respiration; (2) morphine abolishes the cough reflex; (3) morphine may be an allergen to which the patient is specifically sensitive.

The intractable asthmatic patient breathes with extreme difficulty. His respirations are markedly altered; the expiration is prolonged and is accomplished only by voluntary effort, using all the accessory muscles of respiration to accomplish the act. There is no pause between the end of expiration and the beginning of inspiration. The respiratory rate is increased, and the patient makes a strenuous effort to get oxygen. Notwithstanding all effort, he is cyanotic. He is not getting sufficient oxygen to his blood. Morphine slows the respiration; slower respiration means that he gets less oxygen into the lungs in a given time, hence the cyanosis deepens. Morphine dulls the patient's sensibilities, thereby decreasing the voluntary use of his accessory muscles, which are essential to the proper aeration of the blood in this crisis. This also deepens the cyanosis more, throws a greater burden on the heart, and makes worse the very condition we are striving to overcome. It makes the asthma more serious and a casualty more likely.

The cough in asthma is sometimes a distressing symptom, but on the other hand, it is a very necessary act. Mucus forms, often in profuse quantities, in the bronchi. This mucus is eliminated by the cough and expectoration. Morphine diminishes the cough reflex. The cough is checked, and therefore the expectoration is lessened. This thick mucus continues to be secreted; and when it is not coughed up, it forms a very effective barrier to the exchange of gases in the lungs. Again we see that the use of morphine has really defeated its purpose—it has made it more difficult to get adequate oxygen to the body; it has slowed the respiration, taken away the voluntary effort in breathing, and has allowed mucus to occlude the bronchi.

The bronchial reaction to any substance to which the patient is sensitive, is familiar to everyone. The wheal appearing at the site of injection of morphine resembles in every re-

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A new editor may be expected to have something to say relative to his ideas, policies, etc. I sense the honor and the responsibility. I see no reason for any change of policy. May SOUTHWESTERN MEDICINE continue to be as readable with meritorious articles under my guidance as it has been with Warner Watkins at the helm. I regret more than mere words will convey that Dr. Watkins has found it necessary to retire from the editorship. I have assured him that his retirement may be more in name than in actuality for I shall often seek his counsel.

Far above all that the editor can do, however, toward making a medical journal of unimpeachable standards, are the contributors of the scientific articles. The profession of the district covered by SOUTHWESTERN MEDICINE are progressive educated men of medicine of the same general average as may be found in the so-called centers of medical learning. I have had experiences and opportunities which make me a bit of an authority on this question.

The journal will be judged, physicians and surgeons of the Southwest, by your contributions. If you do your duties to the journal, to the profession, to the laity, and to yourselves, you will make SOUTHWESTERN MEDICINE more valuable in the future than it has been in the past, by your meritorious contributions.

It is not to be expected that we, separated as we are from medical research laboratories, will contribute articles based upon work such as laboratory workers only can do.

Clinical observations, however, may be far more valuable and applicable to practical problems of medical practice, than are many of the laboratory productions. No reproach is intended upon the laboratory men.

In a laboratory experiment, the worker sets the stage, arranges the players and the atmosphere, and attempts to place the correct interpretations and conclusions upon the results. In clinical observations the stage is prearranged, the players and the atmosphere are there all set ahead of schedule and the duty of the observer is to place the correct interpretations and conclusions upon what is observed.

The clinician often has most precious opportunities to see and know things no other physician ever experienced. It is his duty to describe what he has seen and knows so the others may profit thereby. There are too many high type physicians in our midst who never write a word for medical journals and who have valuable observations, which are being concealed. Let there be a change of heart of these men about medical writing.

I have one deep conviction on medical writing. The thoughts should be put into the fewest possible words. No physician has time to read one per cent of what is published and is worthwhile. My admonition is to write of your experiences but to be brief.

When I first wrote for scientific journals about 30 years ago, I became offended when the editor to whom I had submitted an article suggested changes in my manuscript. I have slowly had a change of heart. I now value a vigorous critic. The friend who hands back my paper with few or no pencil marks upon it and only compliments my paper, is not being helpful like he who cuts my article to pieces, and compels me to rewrite it. Every writer,

especially in medicine, needs a severe critic. If a writer will put an article away until it has been erased from his mind, he may serve as his own critic. Otherwise a fearless critic is all but essential. If I attempt to use a blue pencil freely, I hope not to be misunderstood.

ORVILLE HARRY BROWN.

MEDICAL AND SURGICAL ASSOCIATION OF THE SOUTHWEST

The revised by-laws of the Association provide for an Executive Committee, composed of the officers and the chairman of the Board of Censors; the president is chairman of the Executive Committee and the secretary of the Association is also secretary of the committee. Among the important functions of this Committee is the appointment of important subcommittees, especially the Program Committee and the Membership Committee.

On January 12th, the Executive Committee met in El Paso and made appointments. Dr. E. J. Cummins of El Paso was selected to be chairman of the Program Committee for the 1935 Annual Clinical Conference to be held in El Paso, with the privilege of selecting the other members of the committee. The Membership Committee was completed by the selection of Drs. Orville Egbert, C. R. Swackhamer and J. G. Moir as the three appointed members. The president-elect (Dr. J. J. Gorman) is the ex-officio chairman of this committee.

An intensive campaign for new members is being planned by this committee. The definite dates for the 1935 meeting will be selected by the Program Committee in conference with the local entertaining society; they will be announced shortly.

W. Warner Watkins, Sec'y.

A NEW EDITOR FOR THE JOURNAL

After serving for 12 years as editor-in-chief, Dr. Watkins tendered his resignation to the Board of Managers in December, to take effect with the close of the year 1934. At a meeting of the Board, held in El Paso on January 12th, the Board of Managers elected Dr. Orville Harry Brown, of Phoenix, to this office and he has consented to serve in that capacity.

All communications and exchanges should hereafter be addressed to **DR. ORVILLE HARRY BROWN, EDITOR, 711 PROFESSIONAL BLDG., PHOENIX, ARIZ.**

THE MANAGEMENT OF INTRACTABLE ASTHMA.

(Continued from page 23)

which the patient is specifically sensitive. There is proof that some people are as sensitive to morphine as they are to any other antigen. If the patient with status asthmaticus should be sensitive to the opiate, the administration of morphine will naturally aggravate the condition it is given to relieve.

Finally, in closing, I want to repeat that patients rarely die of uncomplicated asthma. Those who do die with it, almost universally have had an opiate before death; and when we consider the physiology of respiration in asthma, the pathology of asthma, and the pharmacology of morphine, there is no mystery as to the part morphine plays in bringing about these deaths.

SUMMARY

1. The three steps in the management of intractable asthma, which are of primary importance are discussed: (a) change of environment; (b) intravenous dextrose; (c) chloral hydrate and bromides per rectum, for rest.
2. Lesser important measures are discussed, with the results which may be expected.
3. Morphine is definitely contra-indicated, and the reasons for this fact are brought out.

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, DR. P. H.
Director New Mexico State Bureau of Public Health.

Brucellosis

During last year our laboratory made for the first time cultures of Brucella melitensis from blood of New Mexico patients. A patient in Otero county furnished blood containing the melitensis variety and a patient in Chaves county blood containing the abortus variety. It is becoming more than ever a perplexing question to determine how important is brucellosis as a public health problem.

In the early days of brucellosis, when it was still called Malta, or undulant, fever the existence of the problem was discovered by certain inquisitive bacteriologists, in this country

and abroad, who submitted blood specimens sent in for the Widal test to a further test for the specific agglutinins of brucellosis. During a blood survey conducted a year ago in Mora county by Dr. Walter Clarke[1] 1,621 blood specimens taken routinely from all comers yielded 73 specimens—4.5 per cent) that contained some agglutinin for B. melitensis. However, only a single specimen agglutinated in a dilution as high as 1 in 80. What do these low titre agglutinins signify? Ohio records[2] include a case of brucellosis which gave agglutination in a titre of 1:1280 four days after the onset of disease and a titre of 1:80 eight months later. It seems likely that the same individual's blood examined twelve months later might have been positive in a titre no higher than 1:20. On the other hand, in Iowa a group of 120 veterinarians were carefully examined[3]. A history suggestive of undulant fever could be obtained from only three of them and yet "40 per cent showed partial or complete agglutination in the lower dilutions from 1:5 to 1:20)" Hasseltine[4] pointed out nearly five years ago that low titre agglutinations might follow either clinical disease or a small dose of infection sufficient to produce immunity without producing clinical symptoms. To which class do our 73 cases in Mora county belong? Doctor Clarke was unable to elicit histories either of clinical brucellosis or of abortion among the local cattle from 20 of the positive cases that he was able to quesion. All of them, however, were using raw milk of cows or goats.

Now to perplex us still further comes Alice C. Evans[5] saying that a negative agglutinin report is of little significance. "Even in severe cases . . . agglutinins may be lacking in the serum." A fortiori, she concludes, mild and chronic cases may give a negative reaction and goes on to suggest that many cases now labeled neurasthenia may in reality be cases of chronic brucellosis. The intradermal test may prove to be more reliable than the agglutinin test, but already it is clear that this test, too, is not an infallible diagnostic aid.

We must conclude that we do not yet know how important brucellosis is to the public health. One thing we do know: **Pasteurized milk is safe.**

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A PREVIEW OF A VIVISECTION MOTION PICTURE

It was our privilege to be invited on the afternoon of January 20, by the Director General of the American College of Surgeons, Franklin H. Martin, to a preview of a film prepared by the American College of Surgeons for the purpose of educating the public on the importance of animal experimentations.

The film depicts the humane manner in which the experimental animals are treated, the luxurious lives they live as compared with those of the street animals and the tremendous good redounding to humanity from the sacrifice of relatively few animals. For example, Banting sacrificed perhaps 35 to 40 dogs in developing insulin and to date a million human lives have been saved as the result of this work.

The film opens with Dr. Martin sitting at his desk. He gives a short lecture on the contributions of vivisection to humanity. He then introduces Allen B. Kanavel, who lectures throughout the film. Great bustling crowds of humanity are shown and it is pointed out that they are composed of robust healthy folk, not pock marked, not rickety, not bow-legged and not misshapen, not hunch-backed, not emaciated and coughing with tuberculosis, not scarred from scrofula, syphilis, etc., etc.—all because of the achievements of medical science; the use of animals contributed greatly to this. Crowds of sickly persons are then shown to emphasize the large amount of work yet to be done. Lazear, Rickets and others who lost their lives in medical research are seen for a moment with appropriate remarks by the lecturer. The audience is speedily taken through laboratories, hospitals, dog kennels, laboratory operating rooms, hospital operating rooms, etc. A dog hospital and ambulance are shown and the speaker points out the debt the family pets owe to their brothers who have been sacrificed in medical research. Hydrophobia, tet-

anus, etc., are preventable in animals as well as in humans. The animal lover should be impressed that vivisection is necessary even for dumb animals. The cattle, the horses, the hogs, etc., are more free of disease as a result of the knowledge gained through vivisection and as the lecturer discusses this subject herds of the animals are seen. Research men have not hesitated to use themselves for experimental work when animals will not answer the purpose. Dr. Park's picture is displayed in this connection.

The work on cancer, pneumonia, etc., are touched upon to emphasize the tremendous amount of work yet to be done. The speaker concludes by saying that medical research including animal experimentations must go on.

The film teaches its lesson in a quiet forceful, unsensational, non-controversial manner, readily understandable to the layman.

The occasion for the production of the film at this time is that a wealthy woman recently bequeathed a large sum of money providing around 200,000 dollars annually with the specific instruction to the trustees to spend it on antivivisection propaganda.

The film is the first. so far as we have learned of efforts to counteract the propaganda which will soon be forth coming. Dr. Martin previewed the film for the first time to approve or disapprove of it. We are sure that he approved. The audience seemed to approve.

The scenario was written by Dr. Bowman Crowell, associate director of the College of Surgeons. Will Hayes, president of the motion picture producers, is now the honorary chairman of the motion picture board of the college of surgeons. It was through his courtesy, influence and belief in the importance of the subject that the interest of the Pathe News film company was obtained and they made the film.

About 75 of the guests of the Arizona Biltmore Hotel were present at the preview and one woman said that she had been an antivivisectionist but was converted by the film.

NEWS ITEMS

Dr. Carhart, who has been well and favorably known by many of the physicians of the Southwest for his splendid medical attainments and his general good fellowship, has been transferred to St. Cloud, Minn., where he will be pathologist of a 100-bed hospital of the Veterans Administration. Dr. Carhart has been in Whipple for 10 years. During the past few months he has been in charge of the x-ray laboratory as well as being pathologist. His many friends will miss his presence at the various gatherings of medical men.

Drs. Holt and Kennedy, of Globe, were duck hunting the last days of the season. With what luck we have not been informed.

The Gila county chapter of the American Red Cross had its election of officers and directors recently and among the directors we note the names of Dr. T. C. Harper, W. A. Franklin, and W. A. Holt. In Miami among the directors are Drs. John E. Bacon and Nelson D. Brayton.

Newspaper dispatches inform us that Dr. C. G. Salsbury, senior physician and head of the Ganado mission on the Navajo Indian reservation is slowly recovering from a severe respiratory tract infection. Dr. Emory Main, assistant, has had all he can do to take care of the epidemic which is general among the Navajoes. The 80-bed hospital at Ganado is overflowing with 125 patients. The inclement weather and the soft roads are adding greatly to the problem.

On Saturday, January 12, Drs. David Davis and Warner Watkins, president and secretary respectively of the Medical and Surgical association of the Southwest, with Dr. Swackhamer, Board of Managers of SOUTHWESTERN MEDICINE, and Orville Harry Brown, editor, motored over to El Paso for an evening meeting of the trustees of the above mentioned association and also for a meeting of the Board of Managers of SOUTHWESTERN MEDICINE. Deming was reached for a late lunch at the home of Dr. and Mrs. Moir. After the lunch Dr. and Mrs. Moir joined the party at El Paso, as Dr. Moir is a member of the Board of Managers of the Journal representing New Mexico.

Dr. J. J. Gorman, president elect of the Medical and Surgical Association of the Southwest, entertained the group to dinner.

Dr. W. R. Jamison, member of the Board of Trustees, came in time to get something to eat and attend the meetings after the dinner.

Jeremiah E. Metzger, who has been away from Arizona for eight years dropped into

Phoenix recently and in conversation with him we learned that he is returning to make his home in Tucson, prefering Arizona to other states or countries. He has in recent years made two trips around the world. He does not expect to enter practice.

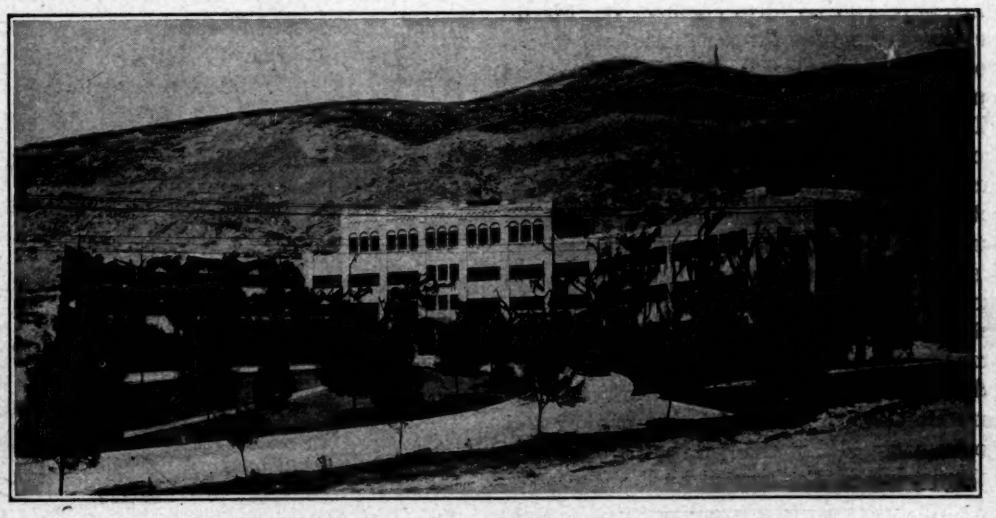
Dr. Agnes McKee Wallace, former Arizona physician and pioneer, died at Buell, Missouri, December 28, 1934, at age 84. Burial was at Montgomery, Missouri. At one time she was physician for the State School for Boys at Fort Grant.

Norman Ross, M. D., of Phoenix, has been appointed county physician for Maricopa County pending the working out of a plan whereby all the physicians of the county who wish may do medical work for the indigents. A committee composed of Leslie R. Kober, chairman, W. W. Watkins, David M. Davis and Orville Harry Brown was appointed by the president of the Maricopa Medical Society, S. I. Bloomhardt, to work out a plan which might be accepted by the members of the county board of supervisors. The plan was submitted at the last meeting of the Maricopa Medical Society and by a narrow margin it was voted to continue with negotiations to develop a feasable plan. The new president of the medical society, F. T. Fahlen, was instructed to appoint a committee to find out how many physicians would agree to accept patients under the plan, providing it can be consummated.

Dr. Franklin Martin of Chicago is again at the Arizona Biltmore for the winter. He invited a group of Arizona surgeons and physicians to a preview, January 20, of a motion picture created by the American College of Surgeons, as an educational film to show the accomplishments of medical research directly and indirectly traceable to vivisection (see editorial).

Drs. Fred C. Jordon and R. J. Stroud are members of the Phoenix Orpheus Club.

If the members of our state associations and El Paso medical society will take the trouble to send in news items, this column will be made of considerable interest and of historical value. It is suggested that physicians nominate their wives as special correspondents for Southwestern Medicine.



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Carlos C. Craig, M. D. is now in private practice, his term of office as Maricopa county physician having expired.

December 12, 1934, the Bernalillo County Medical Society, Albuquerque, New Mexico, elected the following officers: Dr. H. E. Rodgers, President; Dr. L. C. Cook, First Vice-President; Dr. L. M. Miles, Second Vice-President; Dr. E. W. Johns, Secretary-Treasurer; Drs. H. M. Goelitz, M. P. Beam and R. M. Mendelson, Censors; Drs. W. R. Lovelace, W. R. Warden, Carl Mulky, C. C. Meacham and H. M. Goelitz, Delegates to the State Medical Meeting.

January 9, 1935, program consisted of Presidential Address by Dr. H. E. Rodgers, read in his absence by Dr. L. C. Cook, and a paper by Dr. W. I. Werner on Childhood Tuberculosis which was well illustrated by slides and x-ray films. Drs. J. B. Ballenger, Howe Eller, Grayson Tarkington and A. J. Wheeler were elected to membership.

Fred G. Holmes, M. D., who has been on a rest cure for a year has returned to his office. He will confine himself to office work.

Dr. Boyd M. Richardson, an ophtholmologist in the federal service mostly in Arizona for many years, is ill and unable to work. He is living in Phoenix and is able to be around part of the time. He has specialized in trachoma work largely among the Indians.

Dr. Jesse D. Hamer is a member of the board of directors of the Maricopa County Red Cross.

Dr. Trevor G. Browne is participating this month in the Phoenix Little Theatre play entitled "The Late Christopher Bean." He has appeared in previous productions of the Little Theatre.

Dr. Norman A. Ross, newly appointed physician for Maricopa County, addressed the Phoenix Woman's Club on the subject of public health.

Dr. Archie E. Cruthirds, Eye, Ear, Nose and Throat specialist of Bisbee, we have been informed, is spending at least part of his time in the office of Dr. J. J. McLoone. Dr. McLoone's health is such that he has not been able to return to his practice, much to the regret of his Phoenix confreres.

Dr. G. M. Fronsky, of Flagstaff, is district representative of the Boy Scout Council.

THE SEVENTH ANNUAL CLINICAL CONFERENCE OF DALLAS SOUTHERN CLINICAL SOCIETY DALLAS–MARCH 18th–22nd, 1935

14 DISTINGUISHED GUEST SPEAKERS

Dr. Harry L. Baum, Denver, Otolaryngology
Dr. H. L. Bockus, Philadelphia, Gastro-enterology
Dr. M. Bodansky, Galveston, Physiological-Chemistry
Dr. Franklin G. Ebaugh, Denver, Psychiatry
Dr. Louis Hamman, Baltimore, Internal Medicine
Dr. Jennings C. Litzenberg, Minneapolis, Obstetrics-Gynecology
Dr. Wm. E. Lower, Cleveland, Urology
Dr. Douglas Quick, New York City, Radio therapy-Neoplastic Surgery
Dr. Fred Wise, New York City, Dermatology
Dr. H. Earle Conwell, Birmingham, Orthopedic Surgery
Dr. A. F. Hartmann, St. Louis, Pediatrics
Dr. Waltman Walters, Rochester, Surgery
Dr. Harry S. Gradle, Chicago, Ophthalmology
Dr. E. T. Bell, Minneapolis, Pathology

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EL PASO COUNTY MEDICAL SOCIETY

(Reported by Dr. L. O. Dutton, Sec'y.)

The El Paso County Medical Society met Jan. 14, 1935, at Hotel Hussman in regular meeting, 7:30 P. M.

Dr. E. W. Rheinheimer, after brief remarks, retired from the president's chair, turning the meeting over to Dr B. F. Stevens, President for 1935.

Dr. Stevens read a "Report of a Case of Abdominal Actinomycosis.' Patient was a white male, 31 years of age. Onset of symptoms was Jan., 1929, with a ruptured appendix. From then until death, there was a declining clinical picture characterized by draining sinuses. Autopsy findings were liver and pulmonary abscesses characteristic of actinomycosis. Dr. L. O. Dutton showed a culture of the organism isolated from one of the draining sinuses and discussed the bacteriology of actinomycosis.

Dr. E. D. Strong reported briefly six cases of actinomycosis with lesions about the rectum.

Dr. J. W. Laws mentioned a case of pulmonary actinomycosis with fatal outcome.

Dr. W. W. Waite described the tissues removed at autopsy from Dr. Steven's case.

Dr. J. W. Laws presented material from the State Association showing the unenviable position of Texas in Public Health matters. This presentation was part of the State Association's effort to obtain an increase in Public Health appropriations by familiarizing the public with the facts in the case.

A motion was made by Dr. T. J. McCamant that this society endorse the movement. This passed unanimously. Dr. Stevens referred the matter to the Committee on Public Health and Legislation.

Dr. Laws suggested and it was so ordered by the chair that the secretary write letters of appreciation for past efforts on health matters to each of our local representatives and senators.

Dr. Chas. Rennick was nominated by Dr. Gallagher and was elected to the Standing Committee on Economics to replace Dr. Laws whose term of service had expired.

Dr. Paul Gallagher moved that the chairman of the Economics Committee for each year be the member of the committee whose term of service expires with that year. Passed.

Letters were read from U. S. Dept. of Agriculture, requesting information as to the occurrance of human infestation with the Screw worm.

Dr. Strong recalled three cases and Dr. Vandevere one case.

Dr. Stevens detailed a plan of the official nursing bureau to offer hourly nursing service.

On a motion of Dr. Rennick this was given the endorsement of the society.

The financial report for 1934 was read and Dr. Will Rogers was appointed chairman of auditing committee.

Dr. McCamant spoke of the possibility of securing the second floor of the Toltec Club Building as a permanent meeting place. Dr. McCamant was appointed as chairman of a committee to investigate this, with power to pick his own co-workers.

Dr. Gallagher spoke of the relation of the El Paso County Medical Society to the Journal of the Medical and Surgical Association of the Southwest with partiular reference to the proposed change in the contract between the Medical and Surgical Association of the Southwest and the Journal. It has been proposed that the association pay the Journal $100.00 per year instead of $2.00 per member as previously done. After discussion of the various phases of this change by Drs. Gorman, Egbert, Rheinheimer and Vandevere, it was moved and passed that the two members of the Board of Managers of the Journal from the El Paso County Medical Society be empowered to act for the society.

Dr. McCamant moved to reduce the regular annual dues for 1935 by $4.00. Passed.

Meeting adjourned 9:20 P. M.

AMERICAN BOARD OF RADIOLOGY

The **American Board of Radiology** will hold a **meeting during** the **California State Medical Association** at **Yosemite in May** of this year.

The purpose of meeting will be **to examine candidates** for **qualifications** in specialty of **radiology**. Separate examinations will be given in the different branches of radiology—certificates to be issued in accordance with type of examination completed.

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